



SEQUENCE LISTING

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<120> NPC1L1 (NPC3) AND METHODS OF USE THEREOF

<130> JB01603-K1-US

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<151> 2003-07-17

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<170> PatentIn version 3.1

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Ala Ala Gln Gly Glu Leu Tyr Thr Pro Lys His Glu Ala Gly Val Cys			
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acc ttt tac gaa gag tgc ggg aaa aac cca gag ctc tct gga ggc ctc			144
Thr Phe Tyr Glu Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Gly Leu			
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Thr Ser Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg His			
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Val Thr Gly Glu His Leu Ala Leu Leu Gln Arg Ile Cys Pro Arg Leu			
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Tyr Asn Gly Pro Asn Thr Phe Ala Cys Cys Ser Thr Lys Gln Leu			
85 90 95			
ctg tcc tta gaa agc agc atg tcc atc acc aag gcc ctt ctc acg cgcc			336
Leu Ser Leu Glu Ser Ser Met Ser Ile Thr Lys Ala Leu Leu Thr Arg			
100 105 110			
tgc ccg gcc tgc tct gac aat ttt gtg agc tta cac tgc cac aac act			384
Cys Pro Ala Cys Ser Asp Asn Phe Val Ser Leu His Cys His Asn Thr			
115 120 125			
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Cys Ser Pro Asp Gln Ser Leu Phe Ile Asn Val Thr Arg Val Val Glu			
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Arg Gly Ala Gly Glu Pro Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr			
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Gln Arg Ser Phe Ala Glu Lys Ala Tyr Glu Ser Cys Ser Gln Val Arg			
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Ile Pro Ala Ala Ser Leu Ala Val Gly Ser Met Cys Gly Val Tyr			
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Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp			
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Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu			
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Pro Gly Gln Ala Leu Pro Asp Gly Ile Gln Pro Leu Asn Gly Lys Ile			
225 230 235 240			

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gaa gcc ccc aaa ctc cct cat aag cac aaa ctc tca ccc cat acc atc Glu Ala Pro Lys Leu Pro His Lys His Lys Leu Ser Pro His Thr Ile 325 330 335	1008
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ctc acc gtc tta gca ctg tcc atc gtt gtg ata gcc tta gca gca Leu Thr Val Leu Ala Leu Ser Phe Ile Val Val Ile Ala Leu Ala Ala 355 360 365	1104
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gcc ccc aag agc cag gcc cgg aaa gag aag tct ttc cat gat gag cat Ala Pro Lys Ser Gln Ala Arg Lys Glu Lys Ser Phe His Asp Glu His 385 390 395 400	1200
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aac	cgc	acc	ctc	ctg	atg	ctc	acg	gcc	aac	cag	act	ctg	aat	ggc	cag	1536
Asn	Arg	Thr	Leu	Leu	Met	Leu	Thr	Ala	Asn	Gln	Thr	Leu	Asn	Gly	Gln	
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acc	tcc	ctg	gtg	gac	tgg	aag	gac	cat	ttc	ctc	tac	tgt	gca	aat	gcc	1584
Thr	Ser	Leu	Val	Asp	Trp	Lys	Asp	His	Phe	Leu	Tyr	Cys	Ala	Asn	Ala	
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cct	ctc	acg	ttc	aaa	gat	ggc	acg	tct	ctg	gcc	ctg	agc	tgc	atg	gct	1632
Pro	Leu	Thr	Phe	Lys	Asp	Gly	Thr	Ser	Leu	Ala	Leu	Ser	Cys	Met	Ala	
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gac	tac	ggg	gct	cct	gtc	ttc	ccc	ttc	ctt	gct	gtt	ggg	gga	tac	caa	1680
Asp	Tyr	Gly	Ala	Pro	Val	Phe	Pro	Phe	Leu	Ala	Val	Gly	Gly	Tyr	Gln	
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Asn	Asn	Tyr	Pro	Ala	Asp	Asp	Pro	Arg	Met	Ala	Gln	Ala	Lys	Leu	Trp	
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Asp	Lys	Phe	Gln	Val	Ala	Phe	Ser	Ala	Glu	Arg	Ser	Leu	Glu	Asp	Glu	
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Ile	Asn	Arg	Thr	Thr	Ile	Gln	Asp	Leu	Pro	Val	Phe	Ala	Val	Ser	Tyr	
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att	atc	gtc	ttc	ctg	tac	atc	tcc	ctg	gcc	ctg	ggc	agc	tac	tcc	aga	1968
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tgc	agc	cga	gta	gct	gtg	gag	tcc	aag	gct	act	ctg	ggc	cta	ggt	ggg	2016
Cys	Ser	Arg	Val	Ala	Val	Glu	Ser	Lys	Ala	Thr	Leu	Gly	Leu	Gly	Gly	
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Tyr	Leu	Gly	Val	Pro	Ser	Ser	Leu	Val	Ile	Ile	Gln	Val	Val	Pro	Phe	
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Tyr	Gln	Arg	Leu	Pro	Arg	Met	Pro	Gly	Glu	Gln	Arg	Glu	Ala	His	Ile	

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tct gag gcc atc tgc ttc ttt cta ggg gcc ctg acc ccc atg cca gct Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala 755	760	765	2304
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ctg ctc cag atg act gcc ttt gtg gcc ctg ctc tcc ctg gat agc aag Leu Leu Gln Met Thr Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys 785	790	795	2400
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aag ctg ccc cca cct aaa gaa aaa gaa ggc ctc tta ctc cgc ttc ttc Lys Leu Pro Pro Lys Glu Lys Glu Gly Leu Leu Leu Arg Phe Phe 820	825	830	2496
cgc aag ata tac gct cct ttc ctg ctg cac aga ttc atc cgc cct gtt Arg Lys Ile Tyr Ala Pro Phe Leu Leu His Arg Phe Ile Arg Pro Val 835	840	845	2544
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tgc aac atc aac gtg ggg cta gac cag gag ctg gct ctg ccc aag gac Cys Asn Ile Asn Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp 865	870	875	2640
tcg tac ttg ata gac tac ttc ctc ttt ctg aac cga tac ctt gaa gtg Ser Tyr Leu Ile Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Leu Glu Val 885	890	895	2688
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Lys Asp Glu Phe Cys Pro Ser Thr Asp Thr Ser Phe Asn Cys Leu Lys	
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Asn Cys Met Asn Arg Thr Leu Gly Pro Val Arg Pro Thr Ala Glu Gln	
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Phe His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Pro Pro Asn Ile	
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aga tgt ccc aaa ggg ggt cta gca gcg tat aga acg tct gtg aat	3114
Arg Cys Pro Lys Gly Gly Leu Ala Ala Tyr Arg Thr Ser Val Asn	
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Leu Ser Ser Asp Gly Gln Val Ile Ala Ser Gln Phe Met Ala Tyr	
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His Lys Pro Leu Arg Asn Ser Gln Asp Phe Thr Glu Ala Leu Arg	
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Ala Ser Arg Leu Leu Ala Ala Asn Ile Thr Ala Asp Leu Arg Lys	
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Val Pro Gly Thr Asp Pro Asn Phe Glu Val Phe Pro Tyr Thr Ile	
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Ser Asn Val Phe Tyr Gln Gln Tyr Leu Thr Val Leu Pro Glu Gly	
1100 1105 1110	
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Ile Phe Thr Leu Ala Leu Cys Phe Val Pro Thr Phe Val Val Cys	
1115 1120 1125	
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Tyr Leu Leu Leu Gly Leu Asp Met Cys Ser Gly Ile Leu Asn Leu	
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ctc tcc atc att atg att ctc gtg gac acc att ggc ctc atg gct	3474
Leu Ser Ile Ile Met Ile Leu Val Asp Thr Ile Gly Leu Met Ala	
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Val Trp Gly Ile Ser Tyr Asn Ala Val Ser Leu Ile Asn Leu Val	
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Thr Ala Val Gly Met Ser Val Glu Phe Val Ser His Ile Thr Arg	
1175 1180 1185	
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Ser Phe Ala Val Ser Thr Lys Pro Thr Arg Leu Glu Arg Ala Lys	
1190 1195 1200	

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Met Thr	Asn Phe Pro Gly Ile	Leu Ile Leu Gly Phe	Ala Gln Ala	
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Gln Leu	Ile Gln Ile Phe Phe	Phe Arg Leu Asn Leu	Leu Ile Thr	
1235	1240	1245		
ttg ctg	ggt ctg ctg cat ggc	ctg gtc ttc ctg ccg	gtt gtc ctc	3789
Leu Leu	Gly Leu Leu His Gly	Leu Val Phe Leu Pro	Val Val Leu	
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agc tat	ctg gga cca gat gtt	aac caa gct ctg gta	cag gag gag	3834
Ser Tyr	Leu Gly Pro Asp Val	Asn Gln Ala Leu Val	Gln Glu Glu	
1265	1270	1275		
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Lys Leu	Ala Ser Glu Ala Ala	Val Ala Pro Glu Pro	Ser Cys Pro	
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cag tac	ccc tcc cct gct gat	gcg gat gcc aat gtt	aac tac ggc	3924
Gln Tyr	Pro Ser Pro Ala Asp	Ala Asp Ala Asn Val	Asn Tyr Gly	
1295	1300	1305		
ttt gcc	cca gaa ctt gcc cac	gga gct aat gct gct	aga agc tct	3969
Phe Ala	Pro Glu Leu Ala His	Gly Ala Asn Ala Ala	Arg Ser Ser	
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<213> Rattus sp.

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Thr Phe Tyr Glu Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Gly Leu			
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50 55 60

Val Thr Gly Glu His Leu Ala Leu Leu Gln Arg Ile Cys Pro Arg Leu
65 70 75 80

Tyr Asn Gly Pro Asn Thr Thr Phe Ala Cys Cys Ser Thr Lys Gln Leu
85 90 95

Leu Ser Leu Glu Ser Ser Met Ser Ile Thr Lys Ala Leu Leu Thr Arg
100 105 110

Cys Pro Ala Cys Ser Asp Asn Phe Val Ser Leu His Cys His Asn Thr
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Arg Gly Ala Gly Glu Pro Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr
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Gln Arg Ser Phe Ala Glu Lys Ala Tyr Glu Ser Cys Ser Gln Val Arg
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Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp
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Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu
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Pro Gly Gln Ala Leu Pro Asp Gly Ile Gln Pro Leu Asn Gly Lys Ile
225 230 235 240

Ala Pro Cys Asn Glu Ser Gln Gly Asp Asp Ser Ala Val Cys Ser Cys
245 250 255

Gln Asp Cys Ala Ala Ser Cys Pro Val Ile Pro Pro Pro Glu Ala Leu
260 265 270

Arg Pro Ser Phe Tyr Met Gly Arg Met Pro Gly Trp Leu Ala Leu Ile
275 280 285

Ile Ile Phe Thr Ala Val Phe Val Leu Leu Ser Ala Val Leu Val Arg

290

295

300

Leu Arg Val Val Ser Asn Arg Asn Lys Asn Lys Ala Glu Gly Pro Gln
305 310 315 320

Glu Ala Pro Lys Leu Pro His Lys His Lys Leu Ser Pro His Thr Ile
325 330 335

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340 345 350

Leu Thr Val Leu Ala Leu Ser Phe Ile Val Val Ile Ala Leu Ala Ala
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Gly Leu Thr Phe Ile Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser
370 375 380

Ala Pro Lys Ser Gln Ala Arg Lys Glu Lys Ser Phe His Asp Glu His
385 390 395 400

Phe Gly Pro Phe Phe Arg Thr Asn Gln Ile Phe Val Thr Ala Arg Asn
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595 600 605

Asp Lys Phe Gln Val Ala Phe Ser Ala Glu Arg Ser Leu Glu Asp Glu
610 615 620

Ile Asn Arg Thr Thr Ile Gln Asp Leu Pro Val Phe Ala Val Ser Tyr
625 630 635 640

Ile Ile Val Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Arg
645 650 655

Cys Ser Arg Val Ala Val Glu Ser Lys Ala Thr Leu Gly Leu Gly Gly
660 665 670

Val Ile Val Val Leu Gly Ala Val Leu Ala Ala Met Gly Phe Tyr Ser
675 680 685

Tyr Leu Gly Val Pro Ser Ser Leu Val Ile Ile Gln Val Val Pro Phe
690 695 700

Leu Val Leu Ala Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu
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Tyr Gln Arg Leu Pro Arg Met Pro Gly Glu Gln Arg Glu Ala His Ile
725 730 735

Gly Arg Thr Leu Gly Ser Val Ala Pro Ser Met Leu Leu Cys Ser Leu
740 745 750

Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala
755 760 765

Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Ile Ile Leu Asp Phe
770 775 780

Leu	Leu	Gln	Met	Thr	Ala	Phe	Val	Ala	Leu	Leu	Ser	Leu	Asp	Ser	Lys
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Arg	Lys	Ile	Tyr	Ala	Pro	Phe	Leu	Leu	His	Arg	Phe	Ile	Arg	Pro	Val
835															845
Val	Met	Leu	Leu	Phe	Leu	Thr	Leu	Phe	Gly	Ala	Asn	Leu	Tyr	Leu	Met
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Cys	Asn	Ile	Asn	Val	Gly	Leu	Asp	Gln	Glu	Leu	Ala	Leu	Pro	Lys	Asp
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Ser	Tyr	Leu	Ile	Asp	Tyr	Phe	Leu	Phe	Leu	Asn	Arg	Tyr	Leu	Glu	Val
885															895
Gly	Pro	Pro	Val	Tyr	Phe	Val	Thr	Thr	Ser	Gly	Phe	Asn	Phe	Ser	Ser
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Glu	Ala	Gly	Met	Asn	Ala	Thr	Cys	Ser	Ser	Ala	Gly	Cys	Lys	Ser	Phe
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Ser	Leu	Thr	Gln	Lys	Ile	Gln	Tyr	Ala	Ser	Glu	Phe	Pro	Asp	Gln	Ser
930															940
Tyr	Val	Ala	Ile	Ala	Ala	Ser	Ser	Trp	Val	Asp	Asp	Phe	Ile	Asp	Trp
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Leu	Thr	Pro	Ser	Ser	Ser	Cys	Cys	Arg	Leu	Tyr	Ile	Arg	Gly	Pro	His
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Lys	Asp	Glu	Phe	Cys	Pro	Ser	Thr	Asp	Thr	Ser	Phe	Asn	Cys	Leu	Lys
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Asn	Cys	Met	Asn	Arg	Thr	Leu	Gly	Pro	Val	Arg	Pro	Thr	Ala	Glu	Gln
995															1005
Phe	His	Lys	Tyr	Leu	Pro	Trp	Phe	Leu	Asn	Asp	Pro	Pro	Asn	Ile	
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Leu Ser Ser Asp Gly Gln Val Ile Ala Ser Gln Phe Met Ala Tyr
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His Lys Pro Leu Arg Asn Ser Gln Asp Phe Thr Glu Ala Leu Arg
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Ala Ser Arg Leu Leu Ala Ala Asn Ile Thr Ala Asp Leu Arg Lys
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Val Pro Gly Thr Asp Pro Asn Phe Glu Val Phe Pro Tyr Thr Ile
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Ser Asn Val Phe Tyr Gln Gln Tyr Leu Thr Val Leu Pro Glu Gly
1100 1105 1110

Ile Phe Thr Leu Ala Leu Cys Phe Val Pro Thr Phe Val Val Cys
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Tyr Leu Leu Leu Gly Leu Asp Met Cys Ser Gly Ile Leu Asn Leu
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Leu Ser Ile Ile Met Ile Leu Val Asp Thr Ile Gly Leu Met Ala
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Val Trp Gly Ile Ser Tyr Asn Ala Val Ser Leu Ile Asn Leu Val
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Thr Ala Val Gly Met Ser Val Glu Phe Val Ser His Ile Thr Arg
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Ser Phe Ala Val Ser Thr Lys Pro Thr Arg Leu Glu Arg Ala Lys
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Asp Ala Thr Val Phe Met Gly Ser Ala Val Phe Ala Gly Val Ala
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Met Thr Asn Phe Pro Gly Ile Leu Ile Leu Gly Phe Ala Gln Ala
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Gln Leu Ile Gln Ile Phe Phe Phe Arg Leu Asn Leu Leu Ile Thr
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Leu Leu Gly Leu Leu His Gly Leu Val Phe Leu Pro Val Val Leu

1250

1255

1260

Ser Tyr Leu Gly Pro Asp Val Asn Gln Ala Leu Val Gln Glu Glu
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Lys Leu Ala Ser Glu Ala Ala Val Ala Pro Glu Pro Ser Cys Pro
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Gln Tyr Pro Ser Pro Ala Asp Ala Asp Ala Asn Val Asn Tyr Gly
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Leu Pro Lys Ser Asp Gln Lys Phe
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Arg Leu Ala Gln Ser Glu Pro Tyr Thr Thr Ile His Gln Pro Gly Tyr
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tgc gcc ttc tat gac gaa tgt ggg aag aac cca gag ctg tct gga agc 144
Cys Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser
35 40 45

ctc atg aca ctc tcc aac gtg tcc tgc ctg tcc aac acg ccg gcc cgc 192
Leu Met Thr Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg
50 55 60

aag atc aca ggt gat cac ctg atc cta tta cag aag atc tgc ccc cgc 240

Lys Ile Thr Gly Asp His Leu Ile Leu Leu Gln Lys Ile Cys Pro Arg			
65	70	75	80
ctc tac acc ggc ccc aac acc caa gcc tgc tgc tcc gcc aag cag ctg			288
Leu Tyr Thr Gly Pro Asn Thr Gln Ala Cys Cys Ser Ala Lys Gln Leu			
85	90	95	
gta tca ctg gaa gcg agt ctg tcg atc acc aag gcc ctc ctc acc cgc			336
Val Ser Leu Glu Ala Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg			
100	105	110	
tgc cca gcc tgc tct gac aat ttt gtg aac ctg cac tgc cac aac acg			384
Cys Pro Ala Cys Ser Asp Asn Phe Val Asn Leu His Cys His Asn Thr			
115	120	125	
tgc agc ccc aat cag agc ctc ttc atc aat gtg acc cgc gtg gcc cag			432
Cys Ser Pro Asn Gln Ser Leu Phe Ile Asn Val Thr Arg Val Ala Gln			
130	135	140	
cta ggg gct gga caa ctc cca gct gtg gtg gcc tat gag gcc ttc tac			480
Leu Gly Ala Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr			
145	150	155	160
cag cat agc ttt gcc gag cag agc tat gac tcc tgc agc cgt gtg cgc			528
Gln His Ser Phe Ala Glu Gln Ser Tyr Asp Ser Cys Ser Arg Val Arg			
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gtc cct gca gct gcc acg ctg gct gtg ggc acc atg tgt ggc gtg tat			576
Val Pro Ala Ala Ala Thr Leu Ala Val Gly Thr Met Cys Gly Val Tyr			
180	185	190	
ggc tct gcc ctt tgc aat gcc cag cgc tgg ctc aac ttc cag gga gac			624
Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp			
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aca ggc aat ggt ctg gcc cca ctg gac atc acc ttc cac ctc ttg gag			672
Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu			
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cct ggc cag gcc gtg ggg agt ggg att cag cct ctg aat gag ggg gtt			720
Pro Gly Gln Ala Val Gly Ser Gly Ile Gln Pro Leu Asn Glu Gly Val			
225	230	235	240
gca cgt tgc aat gag tcc caa ggt gac gac gtg gcg acc tgc tcc tgc			768
Ala Arg Cys Asn Glu Ser Gln Gly Asp Asp Val Ala Thr Cys Ser Cys			
245	250	255	
caa gac tgt gca tcc tgt cct gcc ata gcc cgc ccc cag gcc ctc			816
Gln Asp Cys Ala Ala Ser Cys Pro Ala Ile Ala Arg Pro Gln Ala Leu			
260	265	270	
gac tcc acc ttc tac ctg ggc cag atg ccg ggc agt ctg gtc ctc atc			864
Asp Ser Thr Phe Tyr Leu Gly Gln Met Pro Gly Ser Leu Val Leu Ile			
275	280	285	
atc atc ctc tgc tct gtc ttc gct gtg gtc acc atc ctg ctt gtg gga			912
Ile Ile Leu Cys Ser Val Phe Ala Val Val Thr Ile Leu Leu Val Gly			
290	295	300	
ttc cgt gtg gcc ccc gcc agg gac aaa agc aag atg gtg gac ccc aag			960
Phe Arg Val Ala Pro Ala Arg Asp Lys Ser Lys Met Val Asp Pro Lys			

305	310	315	320	
aag ggc acc agc ctc tct gac aag ctc agc ttc tcc acc cac acc ctc Lys Gly Thr Ser Leu Ser Asp Lys Leu Ser Phe Ser Thr His Thr Leu 325	330	335		1008
ctt ggc cag ttc ttc cag ggc tgg ggc acg tgg gtg gct tcg tgg cct Leu Gly Gln Phe Phe Gln Gly Trp Gly Thr Trp Val Ala Ser Trp Pro 340	345	350		1056
ctg acc atc ttg gtg cta tct gtc atc ccg gtg gtg gcc ttg gca gcg Leu Thr Ile Leu Val Leu Ser Val Ile Pro Val Val Ala Leu Ala Ala 355	360	365		1104
ggc ctg gtc ttt aca gaa ctc act acg gac ccc gtc gag ctg tgg tcg Gly Leu Val Phe Thr Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser 370	375	380		1152
gcc ccc aac agc caa gcc cggtt gac gac gac ccc gtc gag ctg tgg tcg Ala Pro Asn Ser Gln Ala Arg Ser Glu Lys Ala Phe His Asp Gln His 385	390	395	400	1200
ttc ggc ccc ttc ttc cga acc aac cag gtc atc ctg acg gct cct aac Phe Gly Pro Phe Phe Arg Thr Asn Gln Val Ile Leu Thr Ala Pro Asn 405	410	415		1248
cggtt tcc agc tac agg tat gac tct ctg ctg ggg ccc aag aac ttc Arg Ser Ser Tyr Arg Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe 420	425	430		1296
agc gga atc ctg gac ctg gac ttg ctg ctg gag ctg cta gag ctg cag Ser Gly Ile Leu Asp Leu Asp Leu Leu Glu Leu Leu Glu Leu Gln 435	440	445		1344
gag agg ctg cgg cac ctc cag gta tgg tcg ccc gaa gca cag cgc aac Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Gln Arg Asn 450	455	460		1392
atc tcc ctg cag gac atc tgc tac gtc ccc ctc aat ccg gac aat acc Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Asp Asn Thr 465	470	475	480	1440
agt ctc tac gac tgc tgc atc aac agc ctc ctg cag tat ttc cag aac Ser Leu Tyr Asp Cys Cys Ile Asn Ser Leu Leu Gln Tyr Phe Gln Asn 485	490	495		1488
aac cgc acg ctc ctg ctc aca gcc aac cag aca ctg atg ggg cag Asn Arg Thr Leu Leu Leu Thr Ala Asn Gln Thr Leu Met Gly Gln 500	505	510		1536
acc tcc caa gtc gac tgg aag gac cat ttt ctg tac tgt gcc aat gcc Thr Ser Gln Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala 515	520	525		1584
ccg ctc acc ttc aag gat ggc aca gcc ctg gcc ctg agc tgc atg gct Pro Leu Thr Phe Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Met Ala 530	535	540		1632
gac tac ggg gcc cct gtc ttc ccc ttc ctt gcc att ggg ggg tac aaa Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Ile Gly Gly Tyr Lys 545	550	555	560	1680

gga aag gac tat tct gag gca gag gcc ctg atc atg acg ttc tcc ctc Gly Lys Asp Tyr Ser Glu Ala Ala Leu Ile Met Thr Phe Ser Leu 565 570 575	1728
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gag gag gcc ttc tta gag gaa atg cga gcc ttc cag cgt cgg atg gct Glu Glu Ala Phe Leu Glu Glu Met Arg Ala Phe Gln Arg Arg Met Ala 595 600 605	1824
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gtg gcc gtg gtc ctg gga gca gtc atg gct gcc atg ggc ttc ttc tcc Val Ala Val Val Leu Gly Ala Val Met Ala Ala Met Gly Phe Phe Ser 675 680 685	2064
tac ttg ggt atc cgc tcc tcc ctg gtc atc ctg caa gtg gtt cct ttc Tyr Leu Gly Ile Arg Ser Ser Leu Val Ile Leu Gln Val Val Pro Phe 690 695 700	2112
ctg gtg ctg tcc gtg ggg gct gat aac atc ttc atc ttt gtt ctc gag Leu Val Leu Ser Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu 705 710 715 720	2160
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tct gag gcc atc tgc ttc cta ggg gcc ctg acc ccc atg cca gct Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala 755 760 765	2304
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ctc ctg cag atg tca gcc ttt gtg gcc ctg ctc tcc ctg gac agc aag Leu Leu Gln Met Ser Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys 785 790 795 800	2400

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Glu Leu Pro Pro Pro Gly Gln Gly Glu Gly Leu Leu Leu Gly Phe Phe	
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Gln Lys Ala Tyr Ala Pro Phe Leu Leu His Trp Ile Thr Arg Gly Val	
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Val Leu Leu Leu Phe Leu Ala Leu Phe Gly Val Ser Leu Tyr Ser Met	
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Cys His Ile Ser Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp	
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Ser Tyr Leu Leu Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Phe Glu Val	
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Gly Ala Pro Val Tyr Phe Val Thr Thr Leu Gly Tyr Asn Phe Ser Ser	
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Glu Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Asn Asn Phe	
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Ser Phe Thr Gln Lys Ile Gln Tyr Ala Thr Glu Phe Pro Glu Gln Ser	
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Tyr Leu Ala Ile Pro Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp	
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ctg acc ccg tcc tcc tgc tgc cgc ctt tat ata tct ggc ccc aat aag	2928
Leu Thr Pro Ser Ser Cys Cys Arg Leu Tyr Ile Ser Gly Pro Asn Lys	
965 970 975	
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Asp Lys Phe Cys Pro Ser Thr Val Asn Ser Leu Asn Cys Leu Lys Asn	
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Cys Met Ser Ile Thr Met Gly Ser Val Arg Pro Ser Val Glu Gln Phe	
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His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Arg Pro Asn Ile Lys	
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Cys Pro Lys Gly Gly Leu Ala Ala Tyr Ser Thr Ser Val Asn Leu	
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Lys	Pro	Leu	Lys	Asn	Ser	Gln	Asp	Tyr	Thr	Glu	Ala	Leu	Arg	Ala	
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Ala	Arg	Glu	Leu	Ala	Ala	Asn	Ile	Thr	Ala	Asp	Leu	Arg	Lys	Val	
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Pro	Gly	Thr	Asp	Pro	Ala	Phe	Glu	Val	Phe	Pro	Tyr	Thr	Ile	Thr	
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Asn	Val	Phe	Tyr	Glu	Gln	Tyr	Leu	Thr	Ile	Leu	Pro	Glu	Gly	Leu	
1100					1105						1110				
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Phe	Met	Leu	Ser	Leu	Cys	Leu	Val	Pro	Thr	Phe	Ala	Val	Ser	Cys	
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Leu	Leu	Leu	Gly	Leu	Asp	Leu	Arg	Ser	Gly	Leu	Leu	Asn	Leu	Leu	
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Ser	Ile	Val	Met	Ile	Leu	Val	Asp	Thr	Val	Gly	Phe	Met	Ala	Leu	
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Trp	Asp	Ile	Ser	Tyr	Asn	Ala	Val	Ser	Leu	Ile	Asn	Leu	Val	Ser	
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Phe	Ala	Ile	Ser	Thr	Lys	Pro	Thr	Trp	Leu	Glu	Arg	Ala	Lys	Glu	
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Ala	Thr	Ile	Ser	Met	Gly	Ser	Ala	Val	Phe	Ala	Gly	Val	Ala	Met	
1205					1210						1215				
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Thr	Asn	Leu	Pro	Gly	Ile	Leu	Val	Leu	Gly	Leu	Ala	Lys	Ala	Gln	
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Leu	Ile	Gln	Ile	Phe	Phe	Phe	Arg	Leu	Asn	Leu	Leu	Ile	Thr	Leu	
1235					1240						1245				
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Leu	Gly	Leu	Leu	His	Gly	Leu	Val	Phe	Leu	Pro	Val	Ile	Leu	Ser	
1250					1255						1260				
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Tyr	Val	Gly	Pro	Asp	Val	Asn	Pro	Ala	Leu	Ala	Leu	Glu	Gln	Lys	

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Arg Ala Glu Glu Ala Val Ala Ala Val Met Val Ala Ser Cys Pro			
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Asn His Pro Ser Arg Val Ser Thr Ala Asp Asn Ile Tyr Val Asn			
1295	1300	1305	
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His Ser Phe Glu Gly Ser Ile Lys Gly Ala Gly Ala Ile Ser Asn			
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Cys Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser			
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Leu Met Thr Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg			
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Lys Ile Thr Gly Asp His Leu Ile Leu Leu Gln Lys Ile Cys Pro Arg			
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Leu Tyr Thr Gly Pro Asn Thr Gln Ala Cys Cys Ser Ala Lys Gln Leu			
85	90	95	
Val Ser Leu Glu Ala Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg			
100	105	110	
Cys Pro Ala Cys Ser Asp Asn Phe Val Asn Leu His Cys His Asn Thr			
115	120	125	

Cys Ser Pro Asn Gln Ser Leu Phe Ile Asn Val Thr Arg Val Ala Gln
130 135 140

Leu Gly Ala Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr
145 150 155 160

Gln His Ser Phe Ala Glu Gln Ser Tyr Asp Ser Cys Ser Arg Val Arg
165 170 175

Val Pro Ala Ala Ala Thr Leu Ala Val Gly Thr Met Cys Gly Val Tyr
180 185 190

Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp
195 200 205

Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu
210 215 220

Pro Gly Gln Ala Val Gly Ser Gly Ile Gln Pro Leu Asn Glu Gly Val
225 230 235 240

Ala Arg Cys Asn Glu Ser Gln Gly Asp Asp Val Ala Thr Cys Ser Cys
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Gln Asp Cys Ala Ala Ser Cys Pro Ala Ile Ala Arg Pro Gln Ala Leu
260 265 270

Asp Ser Thr Phe Tyr Leu Gly Gln Met Pro Gly Ser Leu Val Leu Ile
275 280 285

Ile Ile Leu Cys Ser Val Phe Ala Val Val Thr Ile Leu Leu Val Gly
290 295 300

Phe Arg Val Ala Pro Ala Arg Asp Lys Ser Lys Met Val Asp Pro Lys
305 310 315 320

Lys Gly Thr Ser Leu Ser Asp Lys Leu Ser Phe Ser Thr His Thr Leu
325 330 335

Leu Gly Gln Phe Phe Gln Gly Trp Gly Thr Trp Val Ala Ser Trp Pro
340 345 350

Leu Thr Ile Leu Val Leu Ser Val Ile Pro Val Val Ala Leu Ala Ala
355 360 365

Gly Leu Val Phe Thr Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser
370 375 380

Ala Pro Asn Ser Gln Ala Arg Ser Glu Lys Ala Phe His Asp Gln His
385 390 395 400

Phe Gly Pro Phe Phe Arg Thr Asn Gln Val Ile Leu Thr Ala Pro Asn
405 410 415

Arg Ser Ser Tyr Arg Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe
420 425 430

Ser Gly Ile Leu Asp Leu Asp Leu Leu Leu Glu Leu Leu Glu Leu Gln
435 440 445

Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Gln Arg Asn
450 455 460

Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Asp Asn Thr
465 470 475 480

Ser Leu Tyr Asp Cys Cys Ile Asn Ser Leu Leu Gln Tyr Phe Gln Asn
485 490 495

Asn Arg Thr Leu Leu Leu Thr Ala Asn Gln Thr Leu Met Gly Gln
500 505 510

Thr Ser Gln Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala
515 520 525

Pro Leu Thr Phe Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Met Ala
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Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Ile Gly Gly Tyr Lys
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Gly Lys Asp Tyr Ser Glu Ala Glu Ala Leu Ile Met Thr Phe Ser Leu
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Asn Asn Tyr Pro Ala Gly Asp Pro Arg Leu Ala Gln Ala Lys Leu Trp
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Glu Glu Ala Phe Leu Glu Glu Met Arg Ala Phe Gln Arg Arg Met Ala
595 600 605

Gly Met Phe Gln Val Thr Phe Thr Ala Glu Arg Ser Leu Glu Asp Glu
610 615 620

Ile Asn Arg Thr Thr Ala Glu Asp Leu Pro Ile Phe Ala Thr Ser Tyr
625 630 635 640

Ile Val Ile Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Ser
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Trp Ser Arg Val Met Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly
660 665 670

Val Ala Val Val Leu Gly Ala Val Met Ala Ala Met Gly Phe Phe Ser
675 680 685

Tyr Leu Gly Ile Arg Ser Ser Leu Val Ile Leu Gln Val Val Pro Phe
690 695 700

Leu Val Leu Ser Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu
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Tyr Gln Arg Leu Pro Arg Arg Pro Gly Glu Pro Arg Glu Val His Ile
725 730 735

Gly Arg Ala Leu Gly Arg Val Ala Pro Ser Met Leu Leu Cys Ser Leu
740 745 750

Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala
755 760 765

Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Val Ile Leu Asp Phe
770 775 780

Leu Leu Gln Met Ser Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys
785 790 795 800

Arg Gln Glu Ala Ser Arg Leu Asp Val Cys Cys Cys Val Lys Pro Gln
805 810 815

Glu Leu Pro Pro Pro Gly Gln Gly Glu Gly Leu Leu Leu Gly Phe Phe
820 825 830

Gln Lys Ala Tyr Ala Pro Phe Leu Leu His Trp Ile Thr Arg Gly Val
835 840 845

Val Leu Leu Leu Phe Leu Ala Leu Phe Gly Val Ser Leu Tyr Ser Met

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Gly Ala Pro Val Tyr Phe Val Thr Thr Leu Gly Tyr Asn Phe Ser Ser		
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Glu Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Asn Asn Phe		
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Ser Phe Thr Gln Lys Ile Gln Tyr Ala Thr Glu Phe Pro Glu Gln Ser		
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Tyr Leu Ala Ile Pro Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp		
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960		
Leu Thr Pro Ser Ser Cys Cys Arg Leu Tyr Ile Ser Gly Pro Asn Lys		
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Asp Lys Phe Cys Pro Ser Thr Val Asn Ser Leu Asn Cys Leu Lys Asn		
980	985	990
Cys Met Ser Ile Thr Met Gly Ser Val Arg Pro Ser Val Glu Gln Phe		
995	1000	1005
His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Arg Pro Asn Ile Lys		
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Cys Pro Lys Gly Gly Leu Ala Ala Tyr Ser Thr Ser Val Asn Leu		
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Thr Ser Asp Gly Gln Val Leu Ala Ser Arg Phe Met Ala Tyr His		
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Lys Pro Leu Lys Asn Ser Gln Asp Tyr Thr Glu Ala Leu Arg Ala		
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Pro Gly Thr Asp Pro Ala Phe Glu Val Phe Pro Tyr Thr Ile Thr		
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Asn Val Phe Tyr Glu Gln Tyr Leu Thr Ile Leu Pro Glu Gly Leu
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Phe Met Leu Ser Leu Cys Leu Val Pro Thr Phe Ala Val Ser Cys
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Leu Leu Leu Gly Leu Asp Leu Arg Ser Gly Leu Leu Asn Leu Leu
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Ser Ile Val Met Ile Leu Val Asp Thr Val Gly Phe Met Ala Leu
1145 1150 1155

Trp Asp Ile Ser Tyr Asn Ala Val Ser Leu Ile Asn Leu Val Ser
1160 1165 1170

Ala Val Gly Met Ser Val Glu Phe Val Ser His Ile Thr Arg Ser
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Phe Ala Ile Ser Thr Lys Pro Thr Trp Leu Glu Arg Ala Lys Glu
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Ala Thr Ile Ser Met Gly Ser Ala Val Phe Ala Gly Val Ala Met
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Thr Asn Leu Pro Gly Ile Leu Val Leu Gly Leu Ala Lys Ala Gln
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Leu Ile Gln Ile Phe Phe Arg Leu Asn Leu Leu Ile Thr Leu
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Leu Gly Leu Leu His Gly Leu Val Phe Leu Pro Val Ile Leu Ser
1250 1255 1260

Tyr Val Gly Pro Asp Val Asn Pro Ala Leu Ala Leu Glu Gln Lys
1265 1270 1275

Arg Ala Glu Glu Ala Val Ala Ala Val Met Val Ala Ser Cys Pro
1280 1285 1290

Asn His Pro Ser Arg Val Ser Thr Ala Asp Asn Ile Tyr Val Asn
1295 1300 1305

His Ser Phe Glu Gly Ser Ile Lys Gly Ala Gly Ala Ile Ser Asn
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<211> 885

<212> DNA

<213> Rattus sp.

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<212> DNA

<213> Rattus sp.

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<211> 896
<212> DNA
<213> Rattus sp.

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<211> 3124

<212> DNA

<213> Rattus sp.

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<211> 4484

<212> DNA

<213> Rattus sp.

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<211> 3993
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tcg gcc cag ggt gag ctc tac aca ccc act cac aaa gct ggc ttc tgc		96
Ser Ala Gln Gly Glu Leu Tyr Thr Pro Thr His Lys Ala Gly Phe Cys		
20 25 30		
acc ttt tat gaa gag tgt ggg aag aac cca gag ctt tct gga ggc ctc		144
Thr Phe Tyr Glu Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Gly Leu		
35 40 45		
aca tca cta tcc aat atc tcc tgc ttg tct aat acc cca gcc cgc cat		192
Thr Ser Leu Ser Asn Ile Ser Cys Leu Ser Asn Thr Pro Ala Arg His		
50 55 60		
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Val Thr Gly Asp His Leu Ala Leu Leu Gln Arg Val Cys Pro Arg Leu		
65 70 75 80		
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Tyr Asn Gly Pro Asn Asp Thr Tyr Ala Cys Cys Ser Thr Lys Gln Leu		
85 90 95		
gtg tca tta gac agt agc ctg tct atc acc aag gcc ctc ctt aca cgc		336
Val Ser Leu Asp Ser Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg		
100 105 110		
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Cys Pro Ala Cys Ser Glu Asn Phe Val Ser Ile His Cys His Asn Thr		
115 120 125		
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Cys Ser Pro Asp Gln Ser Leu Phe Ile Asn Val Thr Arg Val Val Gln		
130 135 140		
cgg gac cct gga cag ctt cct gct gtg gtg gcc tat gag gcc ttt tat		480
Arg Asp Pro Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr		
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Gln Arg Ser Phe Ala Glu Lys Ala Tyr Glu Ser Cys Ser Arg Val Arg		

165	170	175	
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aca ggg aat ggc ctg gct ccg ctg gac atc acc ttc cac ctc ttg gag Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu 210	215	220	672
cct ggc cag gcc ctg gca gat ggg atg aag cca ctg gat ggg aag atc Pro Gly Gln Ala Leu Ala Asp Gly Met Lys Pro Leu Asp Gly Lys Ile 225	230	235	720
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aca ccc tgc aat gag tcc cag ggt gaa gac tcg gca gcc tgt tcc tgc Thr Pro Cys Asn Glu Ser Gln Gly Glu Asp Ser Ala Ala Cys Ser Cys 245	250	255	768
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cgc cct tct ttc tac atg ggt cga atg cca ggc tgg ctg gct ctc atc Arg Pro Ser Phe Tyr Met Gly Arg Met Pro Gly Trp Leu Ala Leu Ile 275	280	285	864
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ctc cga gtg gct tcc aac agg aac aag aac aca gca ggc tcc cag Leu Arg Val Ala Ser Asn Arg Asn Lys Asn Lys Thr Ala Gly Ser Gln 305	310	315	960
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gaa gcc ccc aac ctc cct cgt aag cgc aga ttc tca cct cac act gtc Glu Ala Pro Asn Leu Pro Arg Lys Arg Arg Phe Ser Pro His Thr Val 325	330	335	1008
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415			

agg tcc agc tac aag tac gac tcc ctg ctg cta ggg ccc aag aac ttc Arg Ser Ser Tyr Lys Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe 420 425 430	1296
agt ggg atc cta tcc ctg gac ttg ctg cag gag ctg ttg gag cta cag Ser Gly Ile Leu Ser Leu Asp Leu Leu Gln Glu Leu Leu Glu Leu Gln 435 440 445	1344
gag aga ctt cga cac ctg caa gtg tgg tcc cat gag gca cag cgc aac Glu Arg Leu Arg His Leu Gln Val Trp Ser His Glu Ala Gln Arg Asn 450 455 460	1392
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gac tac ggg gca cct gtc ttc ccc ttc ctt gct gtt ggg ggc tac caa Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Val Gly Gly Tyr Gln 545 550 555 560	1680
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gag gag gct ttc ttg aag gaa atg caa tcc ttc cag aga agc aca gct Glu Glu Ala Phe Leu Lys Glu Met Gln Ser Phe Gln Arg Ser Thr Ala 595 600 605	1824
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tct gag gcc atc tgc ttc ttt cta ggg gcc ctg acc tcc atg cca gct Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Ser Met Pro Ala 755 760 765	2304
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Gly Pro Pro Val Tyr Phe Asp Thr Thr Ser Gly Tyr Asn Phe Ser Thr			
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Glu Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Glu Ser Phe			
915	920	925	
tcc cta acc cag aaa atc cag tat gcc agt gaa ttc cct aat cag tct			2832
Ser Leu Thr Gln Lys Ile Gln Tyr Ala Ser Glu Phe Pro Asn Gln Ser			
930	935	940	
tat gtg gct att gct gca tcc tcc tgg gta gat gac ttc atc gac tgg			2880
Tyr Val Ala Ile Ala Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp			
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Leu Thr Pro Ser Ser Ser Cys Cys Arg Ile Tyr Thr Arg Gly Pro His			
965	970	975	
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Lys Asp Glu Phe Cys Pro Ser Thr Asp Thr Ser Phe Asn Cys Leu Lys			
980	985	990	
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Asn Cys Met Asn Arg Thr Leu Gly Pro Val Arg Pro Thr Thr Glu Gln			
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Phe His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Thr Pro Asn Ile			
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Arg Cys Pro Lys Gly Gly Leu Ala Ala Tyr Arg Thr Ser Val Asn			
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Leu Ser Ser Asp Gly Gln Ile Ile Ala Ser Gln Phe Met Ala Tyr			
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His Lys Pro Leu Arg Asn Ser Gln Asp Phe Thr Glu Ala Leu Arg			
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Ala Ser Arg Leu Leu Ala Ala Asn Ile Thr Ala Glu Leu Arg Lys			
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Val Pro Gly Thr Asp Pro Asn Phe Glu Val Phe Pro Tyr Thr Ile			
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Ser Asn Val Phe Tyr Gln Gln Tyr Leu Thr Val Leu Pro Glu Gly			
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Ile Phe Thr Leu Ala Leu Cys Phe Val Pro Thr Phe Val Val Cys			
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Tyr Leu Leu Leu Gly Leu Asp Ile Arg Ser Gly Ile Leu Asn Leu			

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Leu Ser Ile Ile Met Ile Leu	Val Asp Thr Ile Gly	Leu Met Ala	
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Thr Ala Val Gly Met Ser Val	Glu Phe Val Ser His	Ile Thr Arg	
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Asp Ala Thr Ile Phe Met Gly	Ser Ala Val Phe Ala	Gly Val Ala	
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Met Thr Asn Phe Pro Gly Ile	Leu Ile Leu Gly Phe	Ala Gln Ala	
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Gln Leu Ile Gln Ile Phe Phe	Phe Arg Leu Asn Leu	Leu Ile Thr	
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Leu Leu Gly Leu Leu His Gly	Leu Val Phe Leu Pro	Val Val Leu	
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Ser Tyr Leu Gly Pro Asp Val	Asn Gln Ala Leu Val	Leu Glu Glu	
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Lys Leu Ala Thr Glu Ala Ala	Met Val Ser Glu Pro	Ser Cys Pro	
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Gln Tyr Pro Phe Pro Ala Asp	Ala Asn Thr Ser Asp	Tyr Val Asn	
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Tyr Gly Phe Asn Pro Glu Phe	Ile Pro Glu Ile Asn	Ala Ala Ser	
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Thr Phe Tyr Glu Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Gly Leu
35 40 45

Thr Ser Leu Ser Asn Ile Ser Cys Leu Ser Asn Thr Pro Ala Arg His
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Val Thr Gly Asp His Leu Ala Leu Leu Gln Arg Val Cys Pro Arg Leu
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Tyr Asn Gly Pro Asn Asp Thr Tyr Ala Cys Cys Ser Thr Lys Gln Leu
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Val Ser Leu Asp Ser Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg
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Cys Pro Ala Cys Ser Glu Asn Phe Val Ser Ile His Cys His Asn Thr
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Cys Ser Pro Asp Gln Ser Leu Phe Ile Asn Val Thr Arg Val Val Gln
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Arg Asp Pro Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr
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Gln Arg Ser Phe Ala Glu Lys Ala Tyr Glu Ser Cys Ser Arg Val Arg
165 170 175

Ile Pro Ala Ala Ala Ser Leu Ala Val Gly Ser Met Cys Gly Val Tyr
180 185 190

Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp
195 200 205

Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu
210 215 220

Pro Gly Gln Ala Leu Ala Asp Gly Met Lys Pro Leu Asp Gly Lys Ile
225 230 235 240

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Ser Leu Thr Asp Cys Cys Val Asn Ser Leu Leu Gln Tyr Phe Gln Asn
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Asn His Thr Leu Leu Leu Thr Ala Asn Gln Thr Leu Asn Gly Gln
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Trp Ser Arg Val Ala Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly
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Val Ala Val Val Leu Gly Ala Val Val Ala Ala Met Gly Phe Tyr Ser
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Tyr Leu Gly Val Pro Ser Ser Leu Val Ile Ile Gln Val Val Pro Phe
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710

715

720

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Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Ser Met Pro Ala
755 760 765

Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Ile Ile Phe Asp Phe
770 775 780

Leu Leu Gln Met Thr Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys
785 790 795 800

Arg Gln Glu Ala Ser Arg Pro Asp Val Val Cys Cys Phe Ser Ser Arg
805 810 815

Asn Leu Pro Pro Pro Lys Gln Lys Glu Gly Leu Leu Leu Cys Phe Phe
820 825 830

Arg Lys Ile Tyr Thr Pro Phe Leu Leu His Arg Phe Ile Arg Pro Val
835 840 845

Val Leu Leu Leu Phe Leu Val Leu Phe Gly Ala Asn Leu Tyr Leu Met
850 855 860

Cys Asn Ile Ser Val Gly Leu Asp Gln Asp Leu Ala Leu Pro Lys Asp
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Ser Tyr Leu Ile Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Leu Glu Val
885 890 895

Gly Pro Pro Val Tyr Phe Asp Thr Thr Ser Gly Tyr Asn Phe Ser Thr
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915 920 925

Ser Leu Thr Gln Lys Ile Gln Tyr Ala Ser Glu Phe Pro Asn Gln Ser
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Tyr Val Ala Ile Ala Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp
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Ala Glu Ala Gly Leu Arg Gly Trp Leu Leu Trp Ala Leu Leu Leu Arg
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Leu Ala Gln Ser Glu Pro Tyr Thr Ile His Gln Pro Gly Tyr Cys
20 25 30

gcc ttc tat gac gaa tgt ggg aag aac cca gag ctg tct gga agc ctc 203
Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser Leu
35 40 45

atg aca ctc tcc aac gtg tcc tgc ctg tcc aac acg ccg gcc cgc aag 251
Met Thr Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg Lys
50 55 60 65

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Ile Thr Gly Asp His Leu Ile Leu Leu Gln Lys Ile Cys Pro Arg Leu
70 75 80

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Tyr Thr Gly Pro Asn Thr Gln Ala Cys Cys Ser Ala Lys Gln Leu Val
85 90 95

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Ser Leu Glu Ala Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg Cys
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Pro Ala Cys Ser Asp Asn Phe Val Asn Leu His Cys His Asn Thr Cys
115 120 125

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150	155	160		
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165	170	175		
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180	185	190		
tct gcc ctt tgc aat gcc cag cgc tgg ctc aac ttc cag gga gac aca Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp Thr				683
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210	215	220	225	
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230	235	240		
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245	250	255		
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260	265	270		
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275	280	285		
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310	315	320		
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325	330	335		
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340	345	350		
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355	360	365		
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370	375	380	385	

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ggc ccc ttc ttc cga acc aac cag gtg atc ctg acg gct cct aac cg ^g Gly Pro Phe Phe Arg Thr Asn Gln Val Ile Leu Thr Ala Pro Asn Arg 405 410 415	1307
tcc agc tac agg tat gac tct ctg ctg ggg ccc aag aac ttc agc Ser Ser Tyr Arg Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe Ser 420 425 430	1355
gga atc ctg gac ctg gac ttg ctg ctg gag ctg cta gag ctg cag gag Gly Ile Leu Asp Leu Asp Leu Leu Glu Leu Leu Glu Leu Gln Glu 435 440 445	1403
agg ctg cg ^g cac ctc cag gta tgg tcg ccc gaa gca cag cg ^c aac atc Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Gln Arg Asn Ile 450 455 460 465	1451
tcc ctg cag gac atc tgc tac gcc ccc ctc aat ccg gac aat acc agt Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Asp Asn Thr Ser 470 475 480	1499
ctc tac gac tgc tgc atc aac agc ctc ctg cag tat ttc cag aac aac Leu Tyr Asp Cys Cys Ile Asn Ser Leu Leu Gln Tyr Phe Gln Asn Asn 485 490 495	1547
cg ^c acg ctc ctg ctc aca gcc aac cag aca ctg atg ggg cag acc Arg Thr Leu Leu Leu Thr Ala Asn Gln Thr Leu Met Gly Gln Thr 500 505 510	1595
tcc caa gtc gac tgg aag gac cat ttt ctg tac tgt gcc aat gcc ccg Ser Gln Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala Pro 515 520 525	1643
ctc acc ttc aag gat ggc aca gcc ctg gcc ctg agc tgc atg gct gac Leu Thr Phe Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Met Ala Asp 530 535 540 545	1691
tac ggg gcc cct gtc ttc ccc ttc ctt gcc att ggg ggg tac aaa gga Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Ile Gly Gly Tyr Lys Gly 550 555 560	1739
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aat tac cct gcc ggg gac ccc cgt ctg gcc cag gcc aag ctg tgg gag Asn Tyr Pro Ala Gly Asp Pro Arg Leu Ala Gln Ala Lys Leu Trp Glu 580 585 590	1835
gag gcc ttc tta gag gaa atg cga gcc ttc cag cgt cg ^g atg gct ggc Glu Ala Phe Leu Glu Glu Met Arg Ala Phe Gln Arg Arg Met Ala Gly 595 600 605	1883
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aat cgc acc aca gct gaa gac ctg ccc atc ttt gcc acc agc tac att Asn Arg Thr Thr Ala Glu Asp Leu Pro Ile Phe Ala Thr Ser Tyr Ile 630 635 640	1979
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gag gcc atc tgc ttc ttc cta ggg gcc ctg acc ccc atg cca gct gtg Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala Val 755 760 765	2363
cg ^g acc ttt gcc ctg acc tct ggc ctt gca gtg atc ctt gac ttc ctc Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Val Ile Leu Asp Phe Leu 770 775 780 785	2411
ctg cag atg tca gcc ttt gtg gcc ctg ctc tcc ctg gac agc aag agg Leu Gln Met Ser Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys Arg 790 795 800	2459
cag gag gcc tcc cgg ttg gac gtc tgc tgc tgt gtc aag ccc cag gag Gln Glu Ala Ser Arg Leu Asp Val Cys Cys Cys Val Lys Pro Gln Glu 805 810 815	2507
ctg ccc ccg cct ggc cag gga gag ggg ctc ctg ctt ggc ttc ttc caa Leu Pro Pro Gly Gln Gly Glu Gly Leu Leu Leu Gly Phe Phe Gln 820 825 830	2555
aag gct tat gcc ccc ttc ctg ctg cac tgg atc act cga ggt gtt gtg Lys Ala Tyr Ala Pro Phe Leu Leu His Trp Ile Thr Arg Gly Val Val 835 840 845	2603
ctg ctg ctg ttt ctc gcc ctg ttc gga gtg agc ctc tac tcc atg tgc Leu Leu Leu Phe Leu Ala Leu Phe Gly Val Ser Leu Tyr Ser Met Cys 850 855 860 865	2651
cac atc agc gtg gga ctg gac cag gag ctg gcc ctg ccc aag gac tcg	2699

His Ile Ser Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp Ser	870	875	880	
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Tyr Leu Leu Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Phe Glu Val Gly	885	890	895	
gcc ccg gtg tac ttt gtt acc acc ttg ggc tac aac ttc tcc agc gag				2795
Ala Pro Val Tyr Phe Val Thr Thr Leu Gly Tyr Asn Phe Ser Ser Glu	900	905	910	
gct ggg atg aat gcc atc tgc tcc agt gca ggc tgc aac aac ttc tcc				2843
Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Asn Asn Phe Ser	915	920	925	
ttc acc cag aag atc cag tat gcc aca gag ttc cct gag cag tct tac				2891
Phe Thr Gln Lys Ile Gln Tyr Ala Thr Glu Phe Pro Glu Gln Ser Tyr	930	935	940	945
ctg gcc atc cct gcc tcc tcc tgg gtg gat gac ttc att gac tgg ctg				2939
Leu Ala Ile Pro Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp Leu	950	955	960	
acc ccg tcc tcc tgc tgc cgc ctt tat ata tct ggc ccc aat aag gac				2987
Thr Pro Ser Ser Cys Cys Arg Leu Tyr Ile Ser Gly Pro Asn Lys Asp	965	970	975	
aag ttc tgc ccc tcg acc gtc aac tct ctg aac tgc cta aag aac tgc				3035
Lys Phe Cys Pro Ser Thr Val Asn Ser Leu Asn Cys Leu Lys Asn Cys	980	985	990	
atg agc atc acg atg ggc tct gtg agg ccc tcg gtg gag cag ttc cat				3083
Met Ser Ile Thr Met Gly Ser Val Arg Pro Ser Val Glu Gln Phe His	995	1000	1005	
aag tat ctt ccc tgg ttc ctg aac gac cgg ccc aac atc aaa tgt				3128
Lys Tyr Leu Pro Trp Phe Leu Asn Asp Arg Pro Asn Ile Lys Cys	1010	1015	1020	
ccc aaa ggc ggc ctg gca gca tac agc acc tct gtg aac ttg act				3173
Pro Lys Gly Gly Leu Ala Ala Tyr Ser Thr Ser Val Asn Leu Thr	1025	1030	1035	
tca gat ggc cag gtt tta gac aca gtt gcc att ctg tca ccc agg				3218
Ser Asp Gly Gln Val Leu Asp Thr Val Ala Ile Leu Ser Pro Arg	1040	1045	1050	
ctg gag tac agt ggc aca atc tcg gct cac tgc aac ctc tac ctc				3263
Leu Glu Tyr Ser Gly Thr Ile Ser Ala His Cys Asn Leu Tyr Leu	1055	1060	1065	
ctg gat tca gcc tcc agg ttc atg gcc tat cac aag ccc ctg aaa				3308
Leu Asp Ser Ala Ser Arg Phe Met Ala Tyr His Lys Pro Leu Lys	1070	1075	1080	
aac tca cag gat tac aca gaa gct ctg cgg gca gct cga gag ctg				3353
Asn Ser Gln Asp Tyr Thr Glu Ala Leu Arg Ala Ala Arg Glu Leu	1085	1090	1095	
gca gcc aac atc act gct gac ctg cgg aaa gtg cct gga aca gac				3398
Ala Ala Asn Ile Thr Ala Asp Leu Arg Lys Val Pro Gly Thr Asp				

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ccg gct ttt gag gtc ttc ccc tac acg atc acc aat gtg ttt tat			3443
Pro Ala Phe Glu Val Phe Pro Tyr Thr Ile Thr Asn Val Phe Tyr			
1115 1120 1125			
gag cag tac ctg acc atc ctc cct gag ggg ctc ttc atg ctc agc			3488
Glu Gln Tyr Leu Thr Ile Leu Pro Glu Gly Leu Phe Met Leu Ser			
1130 1135 1140			
ctc tgc ctt gtg ccc acc ttc gct gtc tcc tgc ctc ctg ctg ggc			3533
Leu Cys Leu Val Pro Thr Phe Ala Val Ser Cys Leu Leu Leu Gly			
1145 1150 1155			
ctg gac ctg cgc tcc ggc ctc ctc aac ctg ctc tcc att gtc atg			3578
Leu Asp Leu Arg Ser Gly Leu Leu Asn Leu Leu Ser Ile Val Met			
1160 1165 1170			
atc ctc gtg gac act gtc ggc ttc atg gcc ctg tgg ggc atc agt			3623
Ile Leu Val Asp Thr Val Gly Phe Met Ala Leu Trp Gly Ile Ser			
1175 1180 1185			
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Tyr Asn Ala Val Ser Leu Ile Asn Leu Val Ser Ala Val Gly Met			
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Ser Val Glu Phe Val Ser His Ile Thr Arg Ser Phe Ala Ile Ser			
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acc aag ccc acc tgg ctg gag agg gcc aaa gag gcc acc atc tct			3758
Thr Lys Pro Thr Trp Leu Glu Arg Ala Lys Glu Ala Thr Ile Ser			
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Met Gly Ser Ala Val Phe Ala Gly Val Ala Met Thr Asn Leu Pro			
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Gly Ile Leu Val Leu Gly Leu Ala Lys Ala Gln Leu Ile Gln Ile			
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ttc ttc ttc cgc ctc aac ctc ctg atc act ctg ctg ggc ctg ctg			3893
Phe Phe Phe Arg Leu Asn Leu Leu Ile Thr Leu Leu Gly Leu Leu			
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cat ggc ttg gtc ttc ctg ccc gtc atc ctc agc tac gtg ggg cct			3938
His Gly Leu Val Phe Leu Pro Val Ile Leu Ser Tyr Val Gly Pro			
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gac gtt aac ccg gct ctg gca ctg gag cag aag cgg gct gag gag			3983
Asp Val Asn Pro Ala Leu Ala Leu Glu Gln Lys Arg Ala Glu Glu			
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gcg gtg gca gca gtc atg gtg gcc tct tgc cca aat cac ccc tcc			4028
Ala Val Ala Ala Val Met Val Ala Ser Cys Pro Asn His Pro Ser			
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cga gtc tcc aca gct gac aac atc tat gtc aac cac agc ttt gaa			4073
Arg Val Ser Thr Ala Asp Asn Ile Tyr Val Asn His Ser Phe Glu			
1325 1330 1335			

ggt tct atc aaa ggt gct ggt gcc atc agc aac ttc ttg ccc aac	4118
Gly Ser Ile Lys Gly Ala Gly Ala Ile Ser Asn Phe Leu Pro Asn	
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aat ggg cg ^g cag ttc tga tacagccaga ggccctgtct aggctctatg	4166
Asn Gly Arg Gln Phe	
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Cys Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser
35 40 45

Leu Met Thr Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg
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Lys Ile Thr Gly Asp His Leu Ile Leu Leu Gln Lys Ile Cys Pro Arg
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Leu Tyr Thr Gly Pro Asn Thr Gln Ala Cys Cys Ser Ala Lys Gln Leu
85 90 95

Val Ser Leu Glu Ala Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg
100 105 110

Cys Pro Ala Cys Ser Asp Asn Phe Val Asn Leu His Cys His Asn Thr
115 120 125

Cys Ser Pro Asn Gln Ser Leu Phe Ile Asn Val Thr Arg Val Ala Gln
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Leu Gly Ala Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr
145 150 155 160

Gln His Ser Phe Ala Glu Gln Ser Tyr Asp Ser Cys Ser Arg Val Arg
165 170 175

Val Pro Ala Ala Ala Thr Leu Ala Val Gly Thr Met Cys Gly Val Tyr
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Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp
195 200 205

Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu
210 215 220

Pro Gly Gln Ala Val Gly Ser Gly Ile Gln Pro Leu Asn Glu Gly Val
225 230 235 240

Ala Arg Cys Asn Glu Ser Gln Gly Asp Asp Val Ala Thr Cys Ser Cys
245 250 255

Gln Asp Cys Ala Ala Ser Cys Pro Ala Ile Ala Arg Pro Gln Ala Leu
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Asp Ser Thr Phe Tyr Leu Gly Gln Met Pro Gly Ser Leu Val Leu Ile
275 280 285

Ile Ile Leu Cys Ser Val Phe Ala Val Val Thr Ile Leu Leu Val Gly
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Phe Arg Val Ala Pro Ala Arg Asp Lys Ser Lys Met Val Asp Pro Lys
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Lys Gly Thr Ser Leu Ser Asp Lys Leu Ser Phe Ser Thr His Thr Leu
325 330 335

Leu Gly Gln Phe Phe Gln Gly Trp Gly Thr Trp Val Ala Ser Trp Pro
340 345 350

Leu Thr Ile Leu Val Leu Ser Val Ile Pro Val Val Ala Leu Ala Ala
355 360 365

Gly Leu Val Phe Thr Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser
370 375 380

Ala Pro Asn Ser Gln Ala Arg Ser Glu Lys Ala Phe His Asp Gln His
385 390 395 400

Phe Gly Pro Phe Phe Arg Thr Asn Gln Val Ile Leu Thr Ala Pro Asn
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Arg Ser Ser Tyr Arg Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe
420 425 430

Ser Gly Ile Leu Asp Leu Asp Leu Leu Leu Glu Leu Leu Glu Leu Gln
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Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Gln Arg Asn
450 455 460

Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Asp Asn Thr
465 470 475 480

Ser Leu Tyr Asp Cys Cys Ile Asn Ser Leu Leu Gln Tyr Phe Gln Asn
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Asn Arg Thr Leu Leu Leu Thr Ala Asn Gln Thr Leu Met Gly Gln
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Thr Ser Gln Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala

515

520

525

Pro Leu Thr Phe Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Met Ala
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Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Ile Gly Gly Tyr Lys
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Gly Lys Asp Tyr Ser Glu Ala Glu Ala Leu Ile Met Thr Phe Ser Leu
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Asn Asn Tyr Pro Ala Gly Asp Pro Arg Leu Ala Gln Ala Lys Leu Trp
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Glu Glu Ala Phe Leu Glu Glu Met Arg Ala Phe Gln Arg Arg Met Ala
595 600 605

Gly Met Phe Gln Val Thr Phe Met Ala Glu Arg Ser Leu Glu Asp Glu
610 615 620

Ile Asn Arg Thr Thr Ala Glu Asp Leu Pro Ile Phe Ala Thr Ser Tyr
625 630 635 640

Ile Val Ile Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Ser
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Trp Ser Arg Val Met Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly
660 665 670

Val Ala Val Val Leu Gly Ala Val Met Ala Ala Met Gly Phe Phe Ser
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Tyr Leu Gly Ile Arg Ser Ser Leu Val Ile Leu Gln Val Val Pro Phe
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Leu Val Leu Ser Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu
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Tyr Gln Arg Leu Pro Arg Arg Pro Gly Glu Pro Arg Glu Val His Ile
725 730 735

Gly Arg Ala Leu Gly Arg Val Ala Pro Ser Met Leu Leu Cys Ser Leu
740 745 750

Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala
755 760 765

Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Val Ile Leu Asp Phe
770 775 780

Leu Leu Gln Met Ser Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys
785 790 795 800

Arg Gln Glu Ala Ser Arg Leu Asp Val Cys Cys Cys Val Lys Pro Gln
805 810 815

Glu Leu Pro Pro Pro Gly Gln Gly Glu Gly Leu Leu Leu Gly Phe Phe
820 825 830

Gln Lys Ala Tyr Ala Pro Phe Leu Leu His Trp Ile Thr Arg Gly Val
835 840 845

Val Leu Leu Leu Phe Leu Ala Leu Phe Gly Val Ser Leu Tyr Ser Met
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Cys His Ile Ser Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp
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Ser Tyr Leu Leu Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Phe Glu Val
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Gly Ala Pro Val Tyr Phe Val Thr Thr Leu Gly Tyr Asn Phe Ser Ser
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Glu Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Asn Asn Phe
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Ser Phe Thr Gln Lys Ile Gln Tyr Ala Thr Glu Phe Pro Glu Gln Ser
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Tyr Leu Ala Ile Pro Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp
945 950 955 960

Leu Thr Pro Ser Ser Cys Cys Arg Leu Tyr Ile Ser Gly Pro Asn Lys
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Asp Lys Phe Cys Pro Ser Thr Val Asn Ser Leu Asn Cys Leu Lys Asn
980 985 990

Cys Met Ser Ile Thr Met Gly Ser Val Arg Pro Ser Val Glu Gln Phe
995 1000 1005

His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Arg Pro Asn Ile Lys
1010 1015 1020

Cys Pro Lys Gly Gly Leu Ala Ala Tyr Ser Thr Ser Val Asn Leu
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Thr Ser Asp Gly Gln Val Leu Asp Thr Val Ala Ile Leu Ser Pro
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Arg Leu Glu Tyr Ser Gly Thr Ile Ser Ala His Cys Asn Leu Tyr
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Leu Leu Asp Ser Ala Ser Arg Phe Met Ala Tyr His Lys Pro Leu
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Leu Ala Ala Asn Ile Thr Ala Asp Leu Arg Lys Val Pro Gly Thr
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Gly Leu Asp Leu Arg Ser Gly Leu Leu Asn Leu Leu Ser Ile Val
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Met Ile Leu Val Asp Thr Val Gly Phe Met Ala Leu Trp Gly Ile
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Ser Tyr Asn Ala Val Ser Leu Ile Asn Leu Val Ser Ala Val Gly
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Ser Met Gly Ser Ala Val Phe Ala Gly Val Ala Met Thr Asn Leu
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Pro Gly Ile Leu Val Leu Gly Leu Ala Lys Ala Gln Leu Ile Gln
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Leu His Gly Leu Val Phe Leu Pro Val Ile Leu Ser Tyr Val Gly
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g	cc	cc	tt	cc	gg	2040
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c	cc	ct	ct	cc	gg	2160
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